

Remarks

This is filed in response to the Office Action mailed June 16, 2003, and in follow-up to the Telephonic Interview conducted July 31, 2003. The Office Action cited minor formal objection to claim 10 under 35 USC 112, and rejected the pending claims as allegedly anticipated by Bivona, US 5,990,480 or Davidson, US 5,895,884. The above amendments are consistent with those agreed-upon at Interview as distinctly claiming Applicants' invention and, thereby, removing the cited art. The amendments also attend to the minor formal discrepancy in the drawings cited by the Examiner at Interview.

The Drawings are Amended for Form

In response to a request by the Examiner at Interview, Figure 1A is amended to more clearly indicate that element 124 pertains to the plenum between the substrate 102 and cover 108. No new subject matter is added.

The Claims Are Amended for Form

In response to the objection under 35 USC 112, claim 10 is amended to ensure proper antecedent basis for the recited heat dissipative elements. Claim 20 is similarly amended. No new subject matter is added. Entry of the amendments and withdrawal of the objection are requested.

The Claimed Subject Matter Is Patently Distinct from the Cited Art

In ¶¶ 1-2 of the Office Action, the Examiner rejects the pending claims as allegedly anticipated by Bivona and Davidson. The claims are amended as agreed-upon at Interview discussed at Interview to distinguish, still more clearly, Applicants' claimed invention from Bivona and Davidson.

Amended claim 1 is directed to a circuit board assembly comprising a circuit board that has a substrate and one or more circuit components thereon. A cover is coupled to the circuit board and disposed adjacent the substrate so as to define a plenum in which one or more of the components are disposed and in which airflows to cool at least one of those components. The plenum has at least a first edge, for intake of that airflow, disposed between the cover and substrate at a first edge of at least one of the cover and substrate. The plenum likewise has at least a second edge, for exit of that airflow, disposed between the cover and substrate at a second edge of at least one of the

cover and substrate. The cover itself comprises a planar member and one or more structural elements coupled to the member to regulate shock and/or vibration in the cover or circuit board.

As discussed at Interview, Bivona fails to teach or suggest, among other things, a circuit board assembly having a plenum in which cooling air flows. Quite the contrary, Bivona teaches nothing about circuit board assemblies but, rather, is directed to integrated circuit chips. Moreover, Bivona teaches nothing about plenums in which air flows to cool circuit components on a circuit board assembly. Rather, it teaches that an integrated circuit chip should be hermetically sealed -- i.e., sealed to prevent air flow from the outside.

As also discussed at Interview, the shielding lid 1 (Figure 2) disclosed by Davidson appears expressly designed to prevent airflow or other coupling between anything contained thereunder. In this regard, the Applicants directed the Examiner's attention to flanges 8 of the lid and raised side walls 4 of the member on which the lid sits. As discussed at interview, cooperation between those flanges and side walls would effectively prevent any airflow to circuit elements (if any) disposed under the lid.

Although the Examiner suggested that such airflow might be facilitated by fingers 12, the Applicants dispute that there is sufficient factual basis for such an assertion. Nonetheless, as agreed at interview, claim 1 and the other independent claims are amended to make clear that air flow to the plenum of the recited circuit board assembly is provided (at least in part) at first and second edges disposed between the cover and the substrate -- as recited by the amendments.

In view of these amendments, as discussed and agreed-to at Interview, the claimed subject matter is patentably distinct from the cited art. Reconsideration and withdrawal of the art rejections is therefore requested.

Conclusion

This responds in full to the Office Action mailed June 16, 2003, in the above-cited matter. The claims and drawings are amended for form, thereby removing all basis for objection under 35 USC 112. The claims are further amended to clarify patentable distinctions over the cited art. In

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view thereof, the Applicants respectfully request reconsideration and withdrawal of all objections and rejections so that this application can pass forward to issuance.

Respectfully submitted,
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A handwritten signature in dark ink, appearing to read 'David J. Powsner', is written over a horizontal line.

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